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### **G.M. OILSEED RAPE – THE FARMER’S PERCEPTION**

I farm in the North East of Scotland, 15 miles North West of Aberdeen. This area contains 25% of the Scottish arable area, however, this 25% only represents 4% of the entire Scottish land mass. The arable areas of Scotland lie mainly along the Eastern coast plains.

This area is close to 2 degrees south of the Arctic Circle. This provides us with the long daylight hours in May, June and July, and despite Scotland having a reputation for rainy days, men in kilts and wonderful malt whisky, we do get many superb long sunny days.

Oilseed Rape is an excellent crop for us to grow in this area. During the critical growing period for oilseed rape in May and June, often we can get almost 23 hours of sunshine per day. Due to the cold winters and late frosts disease and pest pressure is minimal for Winter Oilseed Rape. Our yields and oil contents generally tend to be higher than for the rest of the UK. So for my farm oilseed rape is a very important break crop and a good entry for Winter Wheat to follow.

Winter oilseed rape has to be drilled by the end of August and will only be harvested the following August. Spring oilseed rape is drilled after the frosts in the Spring usually sometime in April and harvested September or October.

Conventional oilseed rape receives a pre-emergence herbicide, a general herbicide when the plants are around two to three inches tall. My farm suffers from Wild Oats which requires a separate, very expensive, target spray. Generally both Winter and Spring Oilseed Rape will receive three herbicides each whilst growing.

Having put my name down for the Farm Scale Evaluation trials in 1999. I was contacted by both Aventis CropScience – now Bayer CropScience, who are supplying the GM seed, and S.C.R.I. – Scottish Crop Research Institute, who are conducting the scientific field studies. I selected a field to be used for the first GM Spring trial in April 2000. Soil samples were taken to identify weed seeds before we drilled the crop. The field was divided into two, one half to contain the GM crop and the other the conventional crop. The field was then divided up into trans-sections and marked by the scientists and field staff.

During the growing period each trans-section would contain pots collecting weed seeds, slugs, other insects. The field staff visiting the field two or three days a week inspecting the pots and making details. Also bees and butterflies would be counted and identified in the field. Pollen flow was also monitored.

A great deal of painstaking, dedicated hard work was carried out by the field staff and scientists both in the field and back in their labs. The three year Farm Scale Evaluations, on such a large scale with such a diversity of soils and conditions, has never been conducted before in agriculture and will yield a great amount of agricultural information not only for GM crops but for farming generally. I am sure that the final reports will form the basis for much of agriculture in the future.

Separation distances were required between my own crops and my neighbours' crops. My neighbours were all very supportive and interested to see how the GM variety crop will perform. Distances are 50 metres between conventional and full restored hybrid oilseed rape, 100 metres for varietal association and partially restored hybrids and 200 metres between certified seed and registered organic production.

My first Spring Trial in April 2000 was vandalised three times, so it was difficult to gauge what the yield was when we harvested the crop early October. The seed was all bagged in one ton bags and taken away to a council rubbish tip and buried. None of the seed harvested entered the food chain.

The GM half received just one herbicide spray when the crop was around two inches tall. You have to assess the growth of the weed varieties, you cannot wait too long before spraying with the Liberty Link, you need to get the weeds at the right time of growth to have maximum impact. You also have just a few days in which to spray the Spring oilseed rape because in April, May the crop and the weeds are growing very fast. This same will happen for Winter oilseed rape especially if September and October are mild.

Wild oats do not have a great deal of leaf area, and I was delighted with the result after about 10 days of spraying with Liberty Link. The weed varieties were knocked back and destroyed very satisfactory, enabling the crop to grow and establish a canopy. The non GM crop we were battling to control the wild oats with the target spray and the general herbicide had checked the weeds, but there was a lot of general weed rubbish under the canopy, whereas the GM crop was very clean.

In monetary terms I only sprayed one herbicide on the GM crop and three herbicides on the non GM crop, thus saving two thirds the cost of the chemical sprays, use of tractor and diesel, less disturbance to the field for the ground nesting birds. Because I use contractors for spraying I saved £84.00 per hectare by growing the GM oilseed rape.

In August 2000 I drilled my first winter GM oilseed rape crop. This crop was vandalised twice, and again difficult to access the yield.

The Spring GM crop grown in April 2001 was not vandalised and this crop yielded 1.5 tons an acre (3.7 tons per hectare). My rolling average is .9 tons/acre (2.22 tons/ha.). The yield is very close to winter oil seed rape which is in the ground for 12 months, the Spring rape being in the ground for just 5 to 6 months. This crop was the best oilseed rape seed I have ever seen. It was a rich black colour and very even, a big bold seed.

My contractor found that the crop was so easy to swath, the crop is cut about one foot above the ground in rows and the crop lies on top of the stubble to dry out and mature before harvesting. Usually oilseed rape lies all over the place and usually blocks up the swather which has to stop and be cleaned out. This time the swather driver finished the GM crop in record time and the crop looked so neat and tidy in the swath compared to the non GM crop. During swathing the crop the driver had time to phone the local radio station and win himself two tickets to go to the cinema.

When we combined the GM crop again, the combine went through the crop like velvet. The crop was so even, the seeds all ripe there were no blockages to the combine which is the norm with oilseed rape. It was just so impressive. My contractor was very pleased because our harvest window is so narrow, all farmers are looking to get their crops harvested. The GM crop certainly speeded up the harvest, when we started in the conventional crop, the driver had to drop a gear and slow up and we had to stop and sort out the blockages like normal.

The Spring GM crop of 2002, was very interesting. We had a mild winter and the birds were all nesting earlier than normal. The crop went in beginning of April 2002, the soil conditions near perfect and it was through the ground very quickly. The GM crop has a robustness about it as opposed to the conventional crop. The conventional crop was very clean due to the effectiveness of the pre-emergence herbicide, the GM half was a mass of crop and weeds.

I noticed many types of small birds were very busy in the GM half of the field, occasionally they would go into the non GM half but did not stay long there before going back to the GM half. Firstly I thought they were going for the crop, but the birds were foraging for worms, beetles and insects to feed their young, because of the mixture of crop and weeds, the insects etc. were all amongst this mixture. There was nothing for the insects and beetles on the cleaner non GM half. By the time we sprayed the GM half with the herbicide, the majority of the baby birds were ready to leave their nests. I have always noticed more birds in the GM half but this time it was so marked.

The economics of farming are difficult and to be able to reduce the input cost of a crop is most important for economic survival, however, not only cost, but the actual use of less chemicals in order to control the weeds. Because of the robustness of the GM crop I can spray earlier and in turn reduce the residual effect of the herbicide on the resultant seed crop. My contractor and myself were delighted with the management of the GM crop particularly when we came to harvest it, this was an unexpected result. This ease and speed for harvesting is the same for both Winter and Spring oilseed rape.

Over the three years I have had to put up with the five 'P's –

The Press  
 The Protestors  
 The Propaganda  
 The Politicians  
 The Police

My crops have been attacked six times in daylight and at night. Protestors along with their following media have invaded the farm twice. The protestors all have the latest communication gadgets with them, but find it difficult to charge all the batteries to their laptop and palm top computers in the middle of the field. They have all the e-mail addresses for the press and TV and keep them all informed of what they are doing. Several vandals have been caught and brought to court with limited results. The protestors organise public meetings with a hard core of their own people in the audience. If you speak up for GM crops you are drowned out by noise. At the first public meeting in Inverurie about 7 miles from my farm, the police advised that it would not be safe for me to attend, they could not guarantee my safety.

Protestors are a mixture of people, made up of the real hardcore, who can be found at any protest whatever the cause, they carry hammers, screwdrivers and other so called innocent weapons; others interested in environmental matters, and ordinary people who think they are doing something useful but are being duped by propaganda.

There are almost 1 million people in the North East area and just under 5 million people in Scotland, around 56 million people in the UK, I only received 52 letters of objection and replied to them all.

The majority of people I speak to are sensible and simply say 'It's progress that's all and you cannot stand in the way of progress'.